SYSTEM AND METHOD FOR MEDIA-ENABLED MESSAGING HAVING PUBLISH-AND-SEND FEATURE

CROSS-REFERENCE TO RELATED APPLICATION

[0001]   Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002]   Not applicable.

FIELD OF THE INVENTION

[0003]   The invention relates to the field of communications, and more particularly to a platform and techniques for generating email or other messages which seamlessly incorporate linkable high-resolution images or other media for selective viewing by the recipient.

BACKGROUND OF THE INVENTION

[0004]   The proliferation of digital cameras, cellular phones equipped with digital cameras, video cameras and other imaging devices has led to a corresponding interest on the part of consumers in sharing their photographs and other media. While dedicated Web services exist to accept and serve consumers' uploaded camera shots, the necessary steps to prepare, upload and share that media may be inconvenient to some users.

[0005]   Many users on the other hand may prefer or revert to sharing their digital photographs or other media by way of email, choosing to embed or attach the JPG or other digital photo files directly into email messages to friends and others. However,

using ordinary email services as a vehicle to exchange digital photographs, video clips, audio clips or other media has significant drawbacks. For one, high-resolution digital photographs can reach several megabytes in size. Attempting to transmit files of that or greater size via an email service may bog the sender's email client down, or clog the recipient's inbox with content which takes a significant time to open. In cases large email attachments may not transmit at all.

[0006]   Users may instead generate reduced resolution versions of photographs and other media to help alleviate those transmission and storage issues. Some email clients may likewise permit a user to embed or attach reduced resolution versions of images to outgoing email messages. Those various smaller versions may include for example thumbnail or Web-ready images, on the order of 100x100 pixels or more or less. While this permits the recipient to view a representation of the original image, that representation may be too low-resolution to permit printing or other manipulation of the image. Other problems and disadvantages exist in current media sharing technology.

SUMMARY OF THE INVENTION

[0007]   The invention overcoming these and other problems in the art relates in one regard to a system and method for media-enabled messaging having a publish-and-send feature, in which a sender may insert digital photographs, video clips, audio files or samples or other media into an email message or other message object. The images may be automatically embedded or attached as a linkable media object, for instance in the form of a reduced-size or resolution version of the images which the user desires

to share. A composition interface may permit the user to lay out those images and automatically publish full-resolution or otherwise enhanced representations to a media server or other resource, for instance located at a Web site. When the email or other recipient receives the message, they may view the comparatively reduced-resolution linkable media objects embedded in the message, and select one or more of those objects to view in more detail. Activating the linkable media object may seamlessly invoke a media player or other client application to transport the recipient to the associated Web site or other delivery resource. The recipient may then view, listen, download and store or otherwise manipulate the enhanced representation of the photographs or other media. Both the sender and the recipient of the media-enabled message may therefore manipulate the inserted photographs or other media transparently, without having to carry out other steps beyond typical email operation.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008]   Fig. 1 illustrates a network in which a media-enabled message platform may operate, according to embodiments of the invention.

[0009]   Fig. 2 illustrates a media-enabled message, according to an embodiment of the invention.

[0010]   Fig. 3 illustrates the presentation of media objects from a media-enabled message, according to embodiments of the invention.

[0011]   Fig. 4 illustrates the composition of a media-enabled message, according to an embodiment of the invention.

[0012]   Fig. 5 illustrates a flowchart of overall message processing, according to an embodiment of the invention.

DETAILED DESCRIPTION OF EMBODIMENTS

[0013]   Fig. 1 illustrates an overall network architecture in which a system and method for media-enabled messaging may operate, according to an embodiment of the invention. As illustrated in that figure one or more users in a set of users 102 may use personal computers, workstations, personal digital assistants, network-enabled cellular telephones or other clients or devices to communicate with each other via a network 104. Network 104 may be, include or interface to, for example, the Internet, an intranet, a local area network (LAN) or other local or remote network. Those users may manipulate a user interface 112, such as a graphical user interface, command line interface, voice-activated or other interface to perform messaging functions according to the invention.

[0014]   Users may more particularly generate, publish, store and exchange one or more media-enabled message 110 using the media-enabled messaging capabilities of embodiments of the invention. The media-enabled message 110 may in embodiments be or include an email message transmitted by an email client, but it will be appreciated that other types and formats of messaging and messages may be employed. According to the invention in one regard, a user in the set of users 102 may receive a media-enabled message 110 via a set of email servers 106, which set may include one or more post office protocol (POP) servers, Internet message access protocol (IMAP) or others. As illustrated, the recipient of the media-enabled message

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110 may receive and view the message and access enhanced content associated with that message via a media server 108 and other resources, as described herein.

[0015]   As more particularly illustrated in Fig. 2, the media-enabled message 110 may contain various constituent parts including message header 114, which may be or include email address, date, time, subject and other data, as well as a set of linkable media objects 116. As illustrated, the set of linkable media objects 116 may be or include a set of comparatively compact or modest-resolution graphical images. Those images may be or include, for example, digital images downloaded by the user from a digital camera, camera-equipped cellular phone, or other types of images, stored for example in Joint Photographic Experts Group (.JPG) or other formats. In embodiments, linkable media objects 116 may likewise be or include other types or mixed types of media, such as video clips, such as those in Windows^{TM} AVI format, or audio samples or files, such as those in MP3 (MPEG Audio) or other formats. Other media types, formats, files and sources are possible.

[0016]   As illustrated in Fig. 2, any one or more or all of the linkable media objects 116 may be selectable or activatable by the recipient of the media-enabled message 110, such as by operating a mouse cursor or other element of user interface 112. Clicking or otherwise linking or activating any one or more of the linkable media objects 116 may automatically and transparently invoke a media player 118, such as the player illustrated in Fig. 3. As illustrated, selecting one (mountain) image among the set of linkable media objects 116 shown in Fig. 2 may initiate a browser or other tool as shown in Fig. 3, in which or in conjunction with which a slideshow-type or other media player 118 may execute or operate, to present an enhanced representation

of the selected media object. As illustrated, that enhanced representation in the case of an image may be or include a higher-resolution version of the image. That enhanced representation may be automatically downloaded or accessed from media server 108 upon activating the selected one of the linkable media objects 116. The user browsing their email and choosing to view selected media objects from their email inbox or other messaging service may therefore be given an impression of continuousness within their email activity, insofar as no separate action by the user to retrieve and view or play the enhanced content is required. It may be noted that in embodiments, the media player 118 or other media presentation tool may present the enhanced representation of the one or more selected linkable media objects 116 from within the running email client or other tool itself, rather than opening a new browser or other window. Other interfaces and types of presentation are possible.

[0017] In terms of the composition of the media-enabled message 110, as illustrated in Fig. 4 the user who is selecting and arranging media content for the message may be presented with a composition interface 120, for instance within or in conjunction with an email client or other messaging tool. As illustrated the composition interface may include or present a grouping of drop-down image selection, preview, editing, layout, captioning and other tools and utilities to permit the sending user to embed images and other media in media-enabled message 110 according to their preferences and selected styles.

[0018] When operated in conjunction with an email client such as the Microsoft Network (MSN) email client, Outlook™ or Outlook Express™ for example, the user may click different options on composition interface 120 to insert a group of digital

images, such as uploaded camera or other files. When the user has inserted images and clicks the "send" option, the media-enabled message 110 may be transferred to an email Outbox, which transfer may take a brief amount of time. Upon arriving in the email Outbox, an upload of the full-resolution or otherwise enhanced images corresponding to the inserted linkable media objects 116 may be automatically initiated to the media server 108, or other repository or other destination. If the upload process, for instance via Internet connection, fails or stalls unexpectedly, in embodiments such exceptions may be trapped and uploading may be automatically resumed without user intervention.

[0019]   In embodiments the media-enabled message 110 arriving in the email Outbox may be placed into a separate queue from other, non-media email so that transfers may continue in parallel, and not slow down or affect the transmission of those text-based or other messages. It may be noted that in embodiments, if a hard crash of the media server 108, connections to network 104 or other resources occurs which prevents successful transfer of the high-resolution images, the user may be alerted with a message, for instance via pop box or return email, that the upload did not complete. In those cases the sender of the media-enabled message 110 may for example be given the option of trying the upload again later, or transmitting a version of media-enabled message 110 which limits the recipient to viewing the lower-resolution versions of the linkable media objects 116 contained in the message itself. In further embodiments the composition interface 120 may be used to compose email messages or other types of media-enabled message 110 while the sending user is offline, with the image or other files stored to go to the email Outbox upon connection

to the network 104 or other times. Other types of user notification and traffic management are possible.

[0020]   In embodiments, the linkable media objects 116 contained in the media-enabled message 110 may contain digital signatures or fingerprints for various purposes including digital rights management, storage and distribution control. For example, the linkable media objects 116 may each contain a fingerprint which may include a unique identifier for the encoded image, for instance prevent duplicate storage of the image or other object uploaded to media server 108. Other data, such as the upload date or other information, may also be encoded. This may permit the owner or operator of the media server 108, such as an Internet service provider or other, to manage the storage of the images and other content on databases and other resources. In embodiments, each of the linkable media objects 116 may be given a predetermined life span, such as 30 days or other periods of time to conserve and manage storage resources. In other embodiments, the digital signatures incorporated in the linkable media objects 116 may control types and manner of distribution, for instance to permit or not permit editing of images, or permit or not permit reproduction of encoded music or other media. Other types of security and control are possible.

[0021]   Overall message processing according to an embodiment of the invention is illustrated in Fig. 5. In step 502, a user may select a "Photos" or other media option on composition interface 120 or other interface, and click on a "Send in Email" option. Processing may then proceed to step 510. In step 510, an email client application programming interface (API) may be called to generate an email as the

media-enabled message 110. That message may contain selected digital images or photographs as the one or more linkable media objects 116. Processing may then proceed to step 514.

[0022]   Alternatively in step 504 a user may initiate the composition of a new email message or other message format, for instance using an email client or other application. Processing may then proceed to step 514.

[0023]   Alternatively in step 506 a user may share rolls of developed images or other media from an analog film-development page or other Web or other source. Processing may then proceed to step 512. In step 512, an email client API or other application programming or other interface may be invoked to generate a new email or other media-enabled message 110, which in the case of content generated from an analog film-development Web page or other source may contain HTML code including a link to shared photos or other media as linkable media objects 116. Processing may then proceed to step 514.

[0024]   Alternatively in step 508 a user may forward, reply to or otherwise respond to an existing media-enabled message 110 containing one or more linkable media objects 116, for instance to add additional media objects to the media-enabled message 110. Processing may then proceed to step 514.

[0025]   In step 514, processing may proceed to execute an email client or other messaging application or tool, for instance to compose, edit, add captions or otherwise arrange the layout and content of one or more linkable media objects 116 in media-enabled message 110.

[0026]   In step 516, a user may click or activate an option to "Insert Photos" in composition interface 120 or other interface. In step 518, an email client or other application may call an associated API to initiate a photo picker or other tool. In step 520, the photo picker or other tool may return the user's selection of photos, video clips, audio samples or other media. In step 522, the new photos or other linkable media objects 116 may be added to the email or other media-enabled message 110. Processing may then return to the editor processing of step 514.

[0027]   In step 524, a user may click or activate a "preview online slideshow" in the composition interface 120. In step 526, a slideshow viewer or other media player 118 or other tool may be activated. In step 528, a user may close the slideshow viewer or other media player 118 or other tool.

[0028]   In step 530, after editing activity in step 514 or other steps a user may click or activate a "send" option. Activating the "send" option may according to the invention in one regard appear no different to the sender than operating or sending a non-media enabled email message, since publishing activity is automatically invoked. In step 532, the email or other media-enabled message 110 may be transmitted to an outbox, during which time the user may in embodiments be presented with the status of the publishing of the media-enabled message 110 to media server 108 or other resource. In step 534, the email or other client may call an associated API to publish the digital images or photographs or other media, during which time the media-enabled message 110 may remain in an outbox. In step 536, a digital photo or other tool may publish the photographs or other media as the linkable media objects 116 to media server 108, and may return a final URL specifying a location of the linkable media objects 116

accessible via media-enabled message 110. The digital photo or other tool may also

update any expiration dates contained in or associated with linkable media objects

116, including for any forwarded or shared content. During this time, the media-

enabled message 110 may remain in an email outbox or other queue or holding place.

[0029]   In step 538, the email client or other messaging client or tool may update the

media-enabled message 110 with the final URL or URLs for the linkable media

objects 116, and transmit the media-enabled message 110 to the recipient. In the case

of an email client, the media-enabled message 110 or a representation of that message

may then be placed in a "sent" box or other messaging box or folder.

[0030]   The foregoing description of the invention is illustrative, and modifications in

configuration and implementation will occur to persons skilled in the art. For

instance, while the invention has generally been described in terms of one or more

email messages which embed low-resolution or thumbnail representations of stored

images, in embodiments other media, such as audio clips, streamed video or other

types or combinations of types of media may be incorporated.

[0031]   Similarly, while the invention has in embodiments been described as

generating email messages which embed those media objects, in embodiments other

types or formats of messages or messaging such as online chat forums, Web logs or

others, may embed or transmit media according to the invention. Further, while the

invention has been described as accessing a single media server, in implementations

multiple servers may be accessed and each serve one or more types of files or media.

In embodiments distributed media servers if used may operate on a peer-to-peer rather

than client/server basis. Other hardware, software or other resources described as singular may in embodiments be distributed, and similarly in embodiments resources described as distributed may be combined. The scope of the invention is accordingly intended to be limited only by the following claims.